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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,892	01/17/2006	Moon-Soo Han	0001.1125	3441

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EXAMINER	
PENDLETON, DIONNE	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/564,892	HAN, MOON-SOO	
	Examiner	Art Unit	
	DIONNE H. PENDLETON	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. **Claims 7 and 8** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, claim 7 recites in lines 3-4, "...controller calculates a target track to be jumped to". It is unclear to the Examiner how the controller calculates a "target track". Does Applicant mean to recite "..controller calculates **a distance to the** target track to be jumped to" OR, "..controller calculates **the drive signal needed to travel to the** target track to be jumped to" . Clarification and/or correction is required.

Claim 8 is rejected due to it's dependency upon rejected base claim 7.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 1-6 and 9-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nakatsu (Patent Number 4,955,009)** in view of **Akiyama (Patent Number 5,712,835).**

Regarding apparatus claim 1 and method claim 4,

Nakatsu teaches an apparatus for performing track jumping in consideration of a position of a pickup, the apparatus comprising:

a pickup **("6" in figure 2)** to read a signal from an optical disc;

an RF processing unit **("15" in figure 2; output of circuit "15" interpreted as "error signal", see Column 5:22-31)** to generate an error signal to control the pickup by shaping and amplifying the signal read by the pickup;

a servo **("60")** to judge a position of the pickup based on the error signal, generate a track jump start control signal; and

and a driver **("5" in figure 2)** to start moving in response to the track jump start control signal, and stop moving the pickup in response to the track jump end control signal **(column 6:21-26)**.

Nakatsu fails to expressly teach that the track jump start control signal is based on the judged position of the pickup as now recited.

AKIYAMA teaches an optical disk drive apparatus wherein in an access operation to an adjacent track, a first and second track jump are implemented. Akiyama teaches that prior to the second track jump operation, "the position of the light spot is corrected...and made from the corrected, appropriate position" **(column 4:59-66);** and further teaches that the corrected, appropriate position is the center of the track **(see**

column 9:5-11). Akiyama is therefore interpreted as teaching that the track jump start control signal is based on the judged position of the pickup, since the second track jump starts only after the position of the light spot has been corrected.

It would have been obvious for one of ordinary skill in the art at the time of the invention to alter the invention of NAKATSU per the teachings of AKIYAMA, for the purpose of improving the accuracy of the access operation.

Regarding claim 2,

Akiyama teaches wherein if the judged position of the pickup unit is within a reference range e.g. the center of the track, the servo outputs a predetermined voltage as the track jump start control signal to the driver **(column 9:5-11 discloses that the light spot must be appropriately positioned *before* the second track jump)**.

Regarding claim 3,

The combined disclosures of Nakatsu and Akiyama, specifically Akiyama teaches that if the judged position of the pickup unit is not within a reference range e.g. the center of the track, the servo cuts off a predetermined voltage from being output as the track jump start control signal to the driver ***(the velocity generating signal is cut off following the completion of the first jump but prior to the start of the second jump, for the purpose of adjusting the position of the light spot)*** until the judged position of the pickup is within the reference range **(column 9:5-11 discloses that the**

light spot must be appropriately positioned i.e., "within the reference range" *before* the second track jump commences).

Regarding claim 5,

The combined disclosures of Nakatsu and Akiyama, specifically Akiyama teaches wherein if the judged position of the pickup unit is within a reference range e.g. the center of the track, the servo outputs a predetermined voltage as the track jump start control signal to the driver **(column 9:5-11 discloses that the light spot must be appropriately positioned *before* the second track jump)**;

and if the judged position of the pickup unit is not within a reference range e.g. the center of the track, the servo cuts off a predetermined voltage from being output as the track jump start control signal to the driver ***(the velocity generating signal is cut off following the completion of the first jump but prior to the start of the second jump, for the purpose of adjusting the position of the light spot)*** until the judged position of the pickup is within the reference range **(column 9:5-11 discloses that the light spot must be appropriately positioned i.e., "within the reference range" *before* the second track jump commences)**.

Regarding claim 6,

Nakatsu teaches an apparatus for performing track jumping of an optical pickup in an optical disc recording/reproducing apparatus, the apparatus comprising:

an RF processing unit **("15" in figure 2; output of circuit "15" interpreted as "error signal", see Column 5:22-31)** to generate an error signal to control the pickup by shaping and amplifying the signal read by the pickup;

a servo **("60" in figure 2)** to judge a position of the pickup relative to a track of the optical disc based on the positional error signal, and output a tracking control signal for controlling a position of the optical pickup based on the judged position;

a driver **("5" in figure 2)** to control the position of the optical pickup using the tracking control signal output from the servo;

and a controller **("90", also see column 1:46-48)** to monitor the control signal and control the track jumping based on the control signal,

Nakatsu does not expressly teach that the controller outputs a track jump start control signal only if the position of the optical pickup is within a predetermined range of the center of the track. Nor does Nakatsu expressly teach that if the position of the optical pickup is not within the predetermined range, the controller delays outputting the track jump start control signal to the driver until the tracking control signal indicates that the position of the optical pickup is within the predetermined range.

AKIYAMA teaches that a track jump start control signal is generated only if the position of the optical pickup is within a predetermined range of the center of the track. Specifically, Akiyama teaches that prior to the second track jump operation, "the position of the light spot is corrected...and made from the corrected, appropriate position" **(column 4:59-66);** and further teaches that the corrected, appropriate position is the center of the track **(see column 9:5-11)**.

Furthermore, Akiyama teach that if the position of the optical pickup is not within the predetermined range, the track jump start control signal to the driver is delayed until the tracking control signal indicates that the position of the optical pickup is within the predetermined range **(the velocity generating signal is cut off following the completion of the first jump but prior to the start of the second jump, for the purpose of adjusting the position of the light spot; column 9:5-11 discloses that the light spot must be appropriately positioned i.e., "within the reference range" before the second track jump commences)**.

Therefore, It would have been obvious for one of ordinary skill in the art at the time of the invention to alter the invention of NAKATSU per the teachings of AKIYAMA, for the purpose of improving the accuracy of the access operation.

Regarding claim 9,

As recited in the detailed rejections of independent claims 1, 4 and 6, above, the combined disclosures of Nakatsu and Akiyama, teach a method of controlling track jumping of an optical pickup relative to an eccentrically rotating track of an optical disc, the method comprising:

judging whether a position of the optical pickup is within a predetermined range, as broadly claimed, relative to a center of the track at a time of a track jump command **(column9:5-11);**

immediately outputting the track jump command to the optical pickup if the pickup is within the predetermined range, as broadly claimed;

and delaying the outputting of the track jump command if the pickup is not within the predetermined range, as broadly claimed **(column 9:5-11 discloses that the light spot must be appropriately positioned i.e., "within the reference range" before the second track jump commences; also see column 4:59-66)**.

Regarding claims 10,11,12,14 and 16,

The combined disclosures of Nakatsu and Akiyama teach the limitations of claims 4, 6 and 9, respectively. They fail, however, to expressly teach that the jump-start control signal is a "kick voltage" or that the jump-end control signal is a "brake voltage". However, The Examiner takes the Official Notice that it is well known in the art

and would be obvious to apply a kick voltage and a brake voltage for the purpose of forcibly moving the optical pickup in an axial direction (see pertinent references provided below by the Examiner).

Regarding claim 13,

Akiyama teaches delaying the outputting of the track jump command to the optical pickup until the optical pickup is within a predetermined range **(Akiyama teaches that the beam spot must be centered on the track prior to commencement of the final jump, see column 4:56-60);** and outputting the track jump command to the optical pickup while the optical pickup is within the predetermined range **(column 4:63-66).**

Regarding claim 15,

Both Nakatsu and Akiyama teach that the track jump command causes the optical pickup to start moving toward a target track of the optical disc **(see column 5:1-2);** and the method further comprises outputting a track jump stop command to the optical pickup when the optical pickup arrives at the target track **(column 6:21-26 discloses that when the beam spot crosses the last midpoint before the target track, the jump-stop control signal will be generated).**

3. **Claims 7-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nakatsu (Patent Number 4,955,009)** in view of **Akiyama (Patent Number 5,712,835)** as applied to claim 6, and further in view of **Ceshkovsky (Patent Number Re. 32,574).**

Regarding claim 7 *and as best understood with regard to the USC 112 second paragraph rejection above,*

NAKATSU and AKIYAMA teach the apparatus of claim 6.

Nakatsu teaches that the controller outputs a track jump start signal to the driver **(column 1:46-48 teaches that "90" supplies the jump command)** and sets an output time of the track jump-end signal **(column 6:21-26 discloses that when the beam spot crosses the last midpoint before the target track, the jump-stop control signal will be generated).**

However, Nakatsu fails to expressly teach that the controller calculates a target track to be jumped.

CESHKOVSKY teaches that the controller calculates a target track to be jumped to **(column 6:55-60 discloses that the controller calculates the drive signal as a function of the distance to be traveled).**

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of NAKATSU/AKIYAMA and CESHKOVSKY, therein calculating drive voltages as a function of track jump, as claimed, since to do so is a

known technique in the art and would yield predictable results such as tailoring the drive signal according to the distance between tracks to travel.

Regarding claim 8,

Nakatsu teaches the apparatus of claim 6, wherein: the controller outputs the track jump end signal to the driver when the optical pickup arrives at the target track **(column 6:21-26 discloses that when the beam spot crosses the last midpoint before the target track i.e., arrives at the target track, the jump-stop control signal is generated).**

Response to Arguments

4. Applicant's arguments with respect to claims rejected in the official action mailed 6/11/08 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

SHIOURA (US 2005/0237889) teaches use of kick voltage and brake voltage.

LEE (US 2005/0201224) teaches use of kick voltage and brake voltage.

ASAKURA (US 20020051411) teaches use of kick voltage and brake voltage.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIONNE H. PENDLETON whose telephone number is (571)272-7497. The examiner can normally be reached on 10:30-7:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dionne H Pendleton/
Examiner, Art Unit 2627

/Wayne Young/
Supervisory Patent Examiner, Art Unit 2627